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April 13, 2018

VIA ECFS

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554

Re: **Notice of Ex Parte Presentation in IB Docket No. 16-408**

Dear Ms. Dortch:

On April 12, 2018, Mariah Shuman, Senior Director of Regulatory Affairs, and Michael Lindsay, Principal, Advanced Mission Design for WorldVu Satellites Limited ("OneWeb") and the undersigned, outside counsel to OneWeb, met with Jose Albuquerque, Karl Kensinger, Stephen Duall, Kal Krautkramer, and Kathyrn Medley (via telephone) of the International Bureau's Satellite Division. The meeting focused on OneWeb's petition for reconsideration of the band-splitting rule adopted in the Commission's Report and Order in the above-captioned proceeding.[1]

During the meeting, OneWeb discussed the harmful effects of band-splitting on NGSO FSS systems. In particular, OneWeb emphasized the importance of spectrum certainty for all NGSO operators. OneWeb demonstrated that, unlike the Commission's current band-splitting rule, a regulatory framework that relies on ITU date priority would provide sufficient spectrum certainty for all NGSO processing round applicants irrespective of relative date priority.

OneWeb also pointed out that the adoption of a spectrum sharing regime based on ITU date priority will ensure the Commission's processing round framework does not enable anti-competitive behavior. For example, OneWeb highlighted the potential of a later-filed NGSO system to compromise the operating environment of another NGSO system whose operational parameters were previously disclosed, resulting in cost increases and delays that can negatively impact consumers. OneWeb explained that the potential for such inequitable outcomes would be

[1] See Petition for Reconsideration of WorldVu Satellites Limited, IB Docket No. 16-408 (filed Jan. 17, 2018); *see also Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report & Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 7809, 7825-26 ¶¶ 48-50 (2017).

foreclosed by a regime relying on ITU date priority, in which NGSO FSS systems are incentivized and enabled to avoid causing interference to prior-filed systems.

Further details underscoring OneWeb's position are described in the attached handout provided to the Commission representatives.

Please do not hesitate to contact the undersigned with any questions.

Very truly yours,

/s/ Brian D. Weimer

Brian D. Weimer
for SHEPPARD, MULLIN, RICHTER & HAMPTON LLP

cc: Jose Albuquerque
Karl Kensinger
Stephen Duall
Kal Krautkramer
Kathyrn Medley

Enclosure

OneWeb
ACCESS FOR EVERYONE

The Harms of Band Splitting

April 12, 2018

Importance of Spectrum Certainty

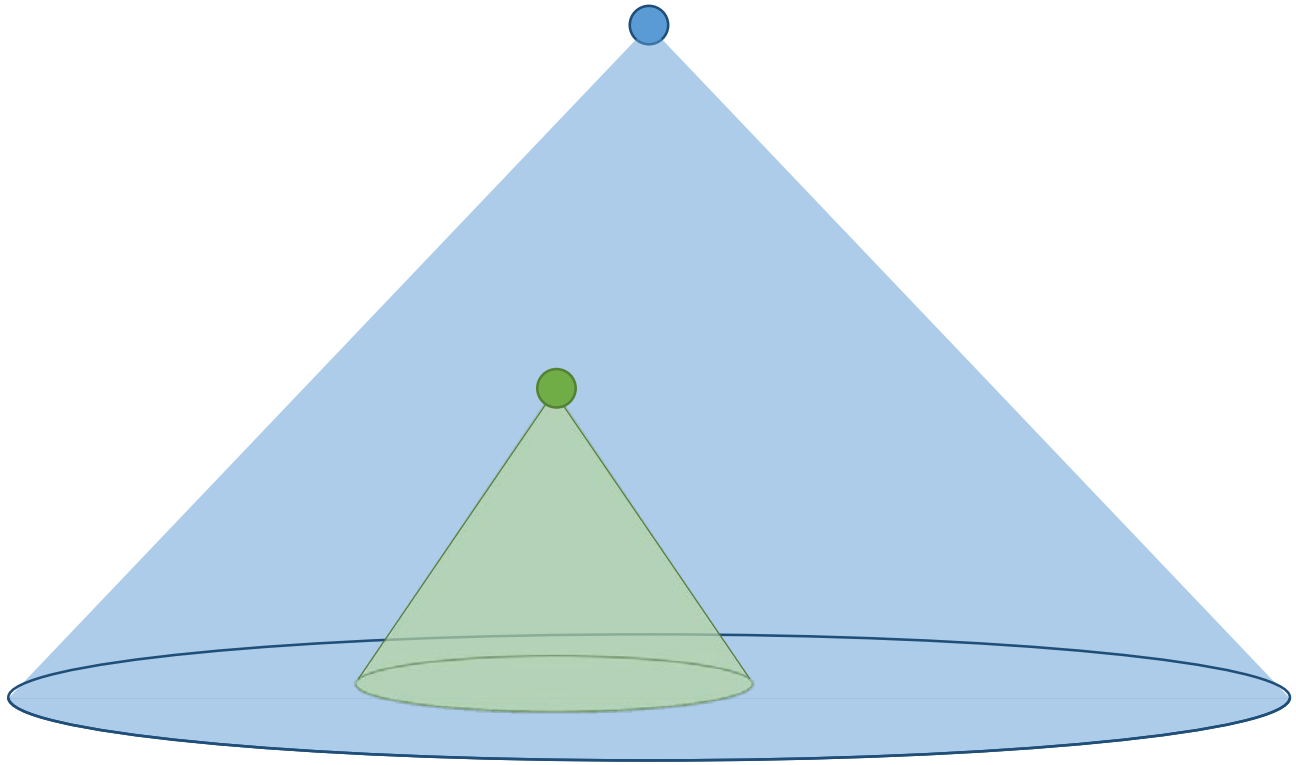
- Securing financial investment requires a steady technical solution, a sound business plan, and a complete characterization of the involved risks
- Spectrum unavailability is an obvious negative, but if it can be minimized and quantified, its known impact can be wrapped into the risk characterization
- Delays and additional costs result when impact to service is an unknown and unquantifiable
  - *How often will spectrum be reduced?*
  - *By what fraction will spectrum be reduced?*
  - *For how long will spectrum be reduced?*
- **Unconstrained risk = the potential for chilling investment, deployment delays, cost increase to consumers**

Coexistence & Spectrum Certainty

Two different satellite systems with their respective possible service areas on surface of Earth (individual beams may not cover entire area at all times)

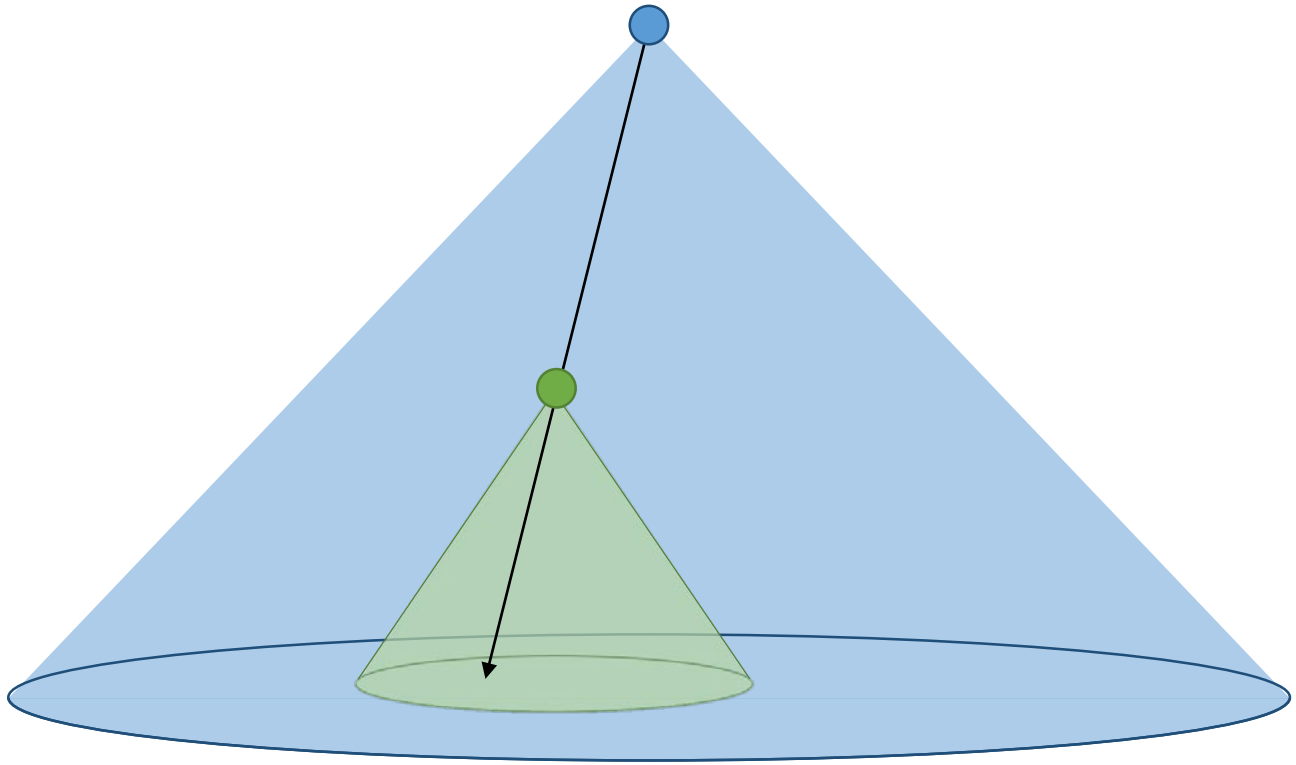
- Different orbit design
- Different elevation and exclusion angles
- Same frequencies

Earlier-in-time system shown in blue
Later-in-time system shown in green



Coexistence & Spectrum Certainty

Geometric inline events between satellites are inevitable, but they only create RF interference if both systems are serving the same point on Earth at the same time



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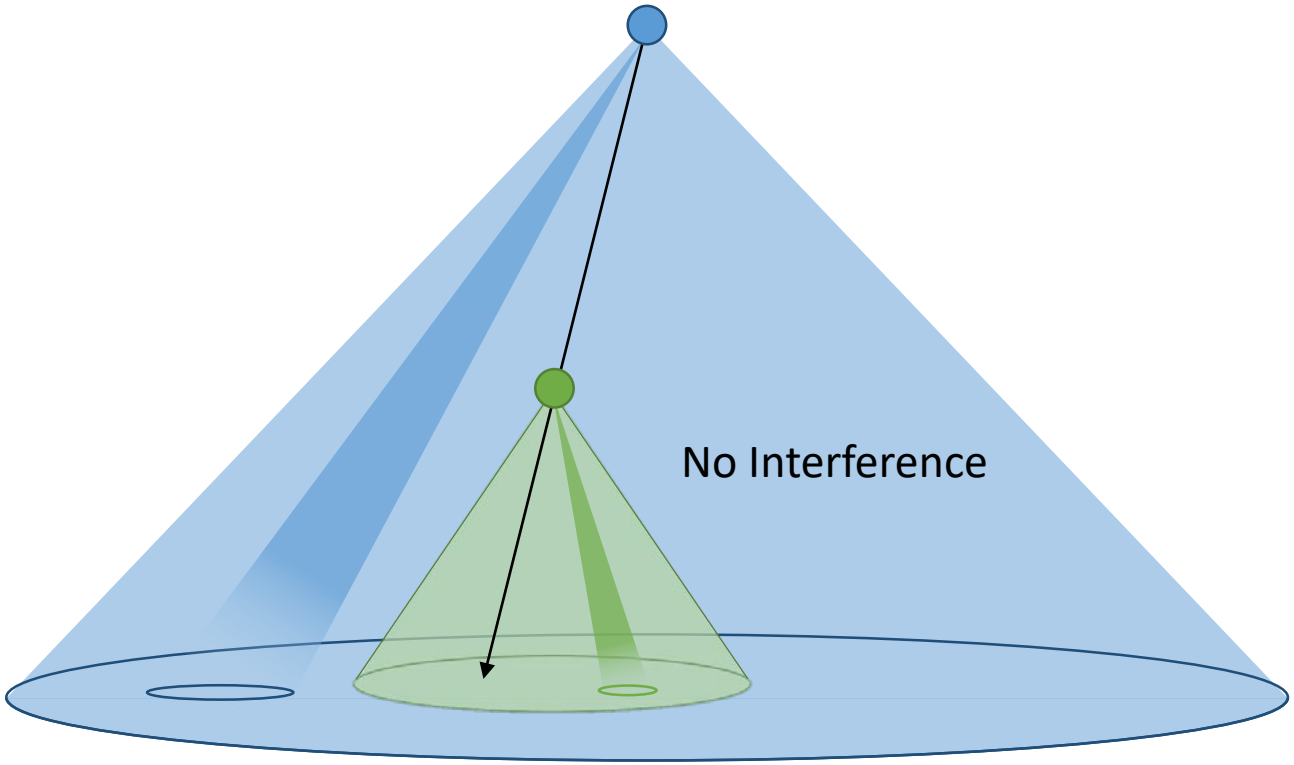
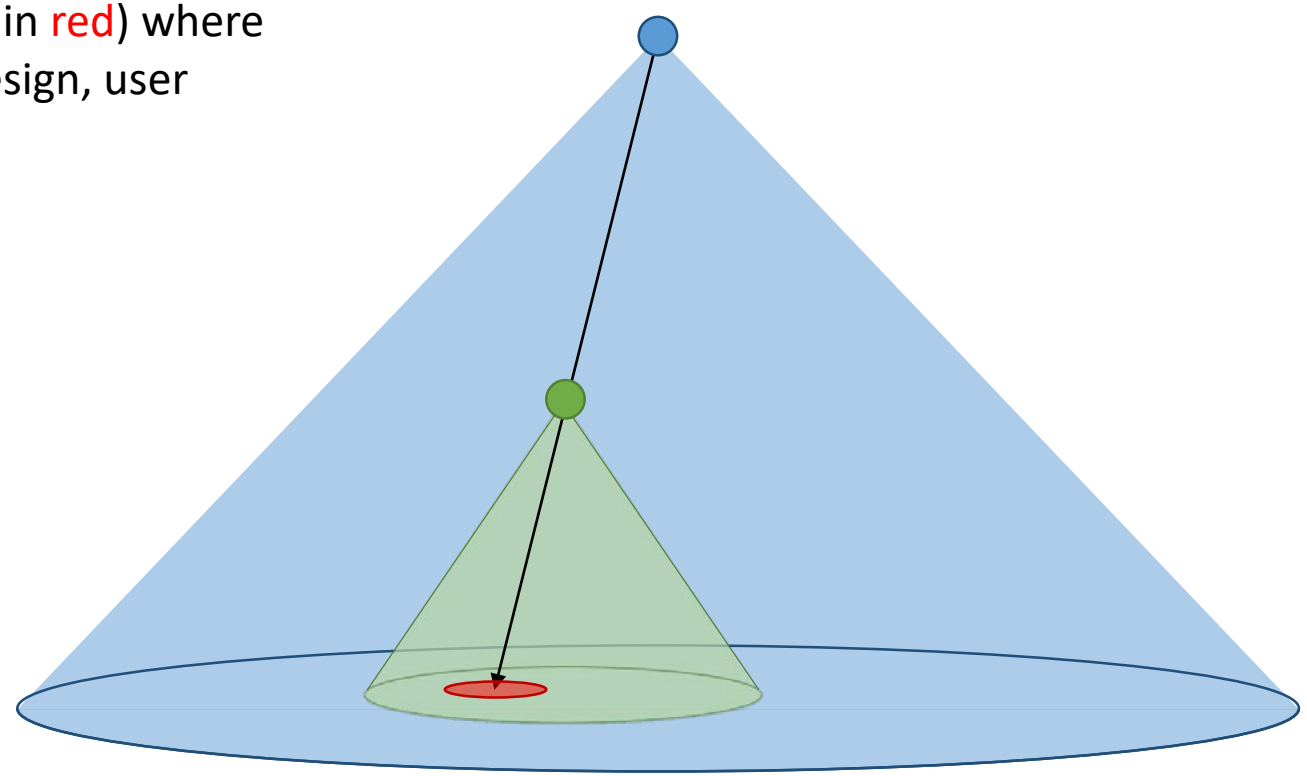


Coexistence & Spectrum Certainty

Interference is still a *possibility* though

6% ΔT/T threshold is useful to define the region (shown in red) where interference could happen, depending on the system design, user locations, and each system's beam pointing schedules



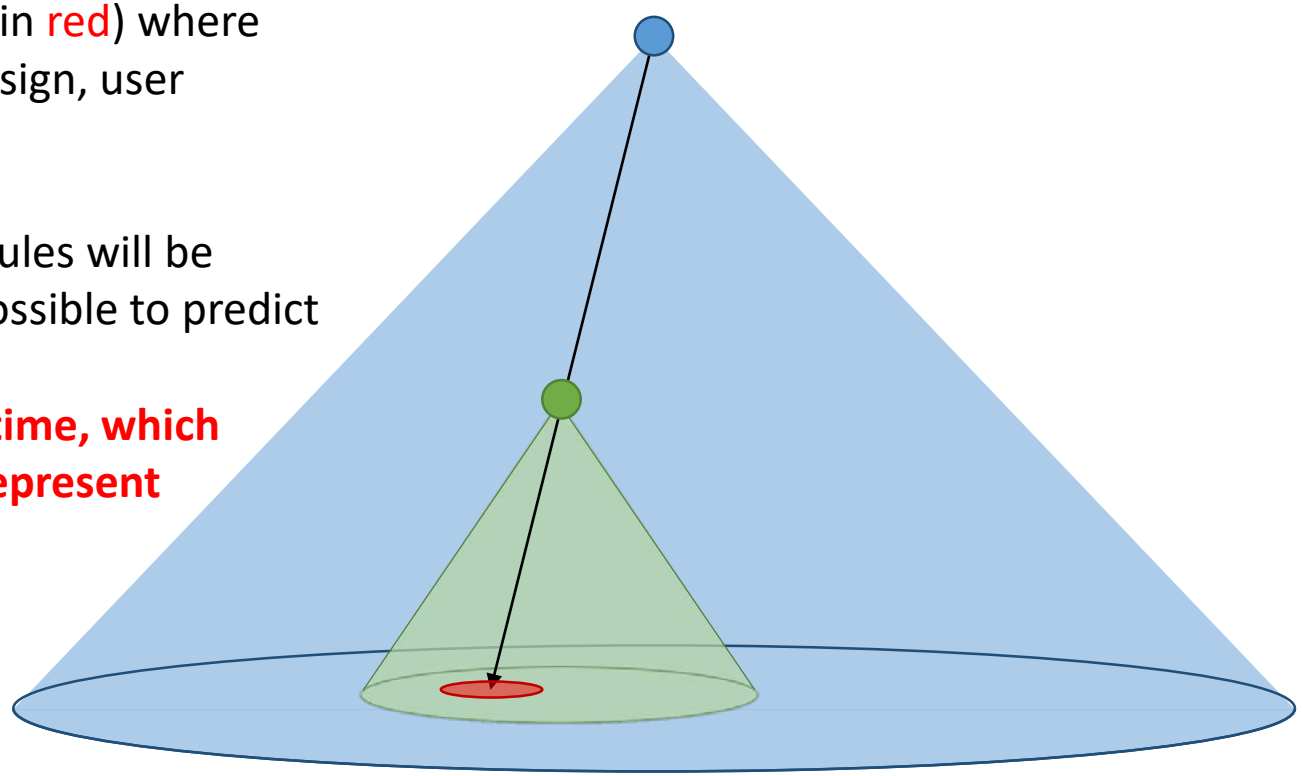
Coexistence & Spectrum Certainty

Interference is still a *possibility* though

6% ΔT/T threshold is useful to define the region (shown in red) where interference could happen, depending on the system design, user locations, and each system's beam pointing schedules

With ubiquitous and mobile users, beam pointing schedules will be dynamic, unpredictable, and beam overlaps will be impossible to predict

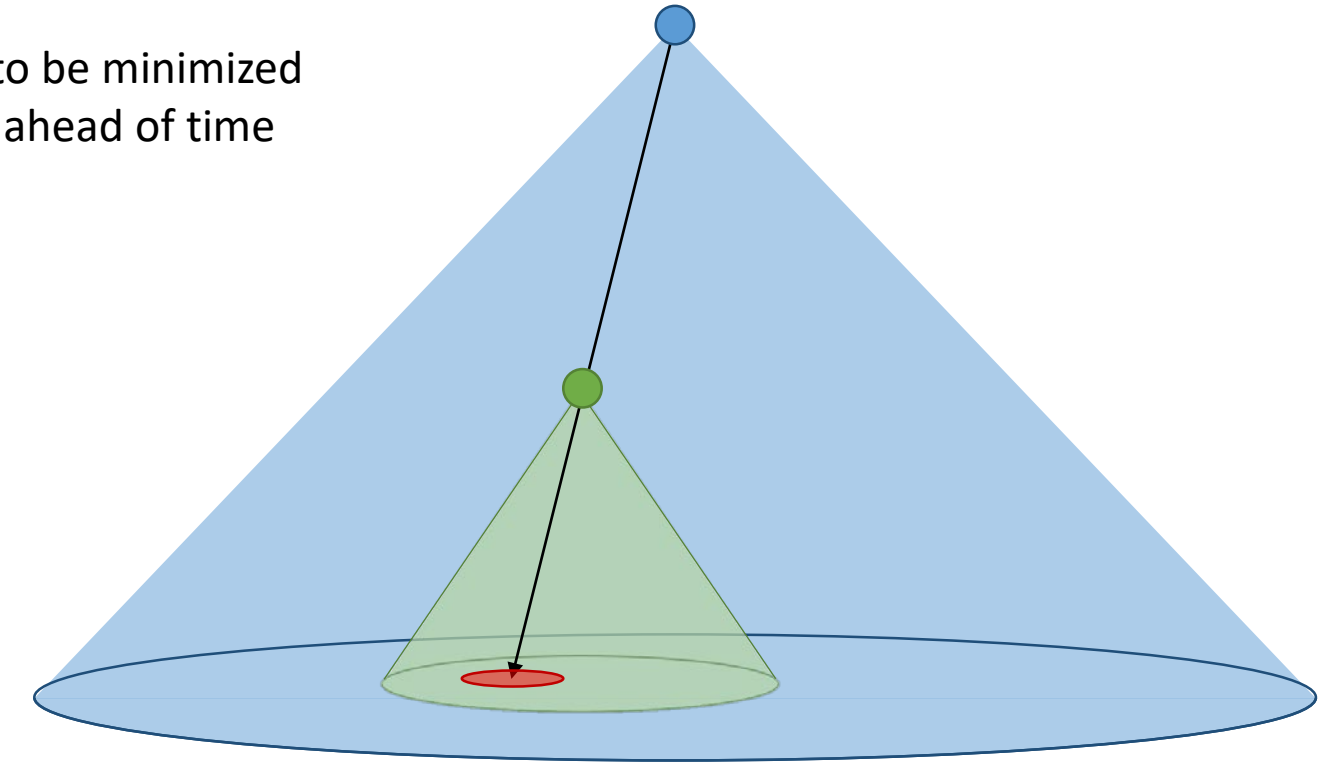
Users of both systems could be in the red areas at any time, which means these areas always exist in theory, and always represent the potential for interference



Advantage of ITU Priority Framework

In a regulatory framework based on ITU priority, the existence of red areas does not mean that spectrum is uncertain in either system

In fact, an ITU priority framework allows the red areas to be minimized because relevant details of all prior systems are known ahead of time



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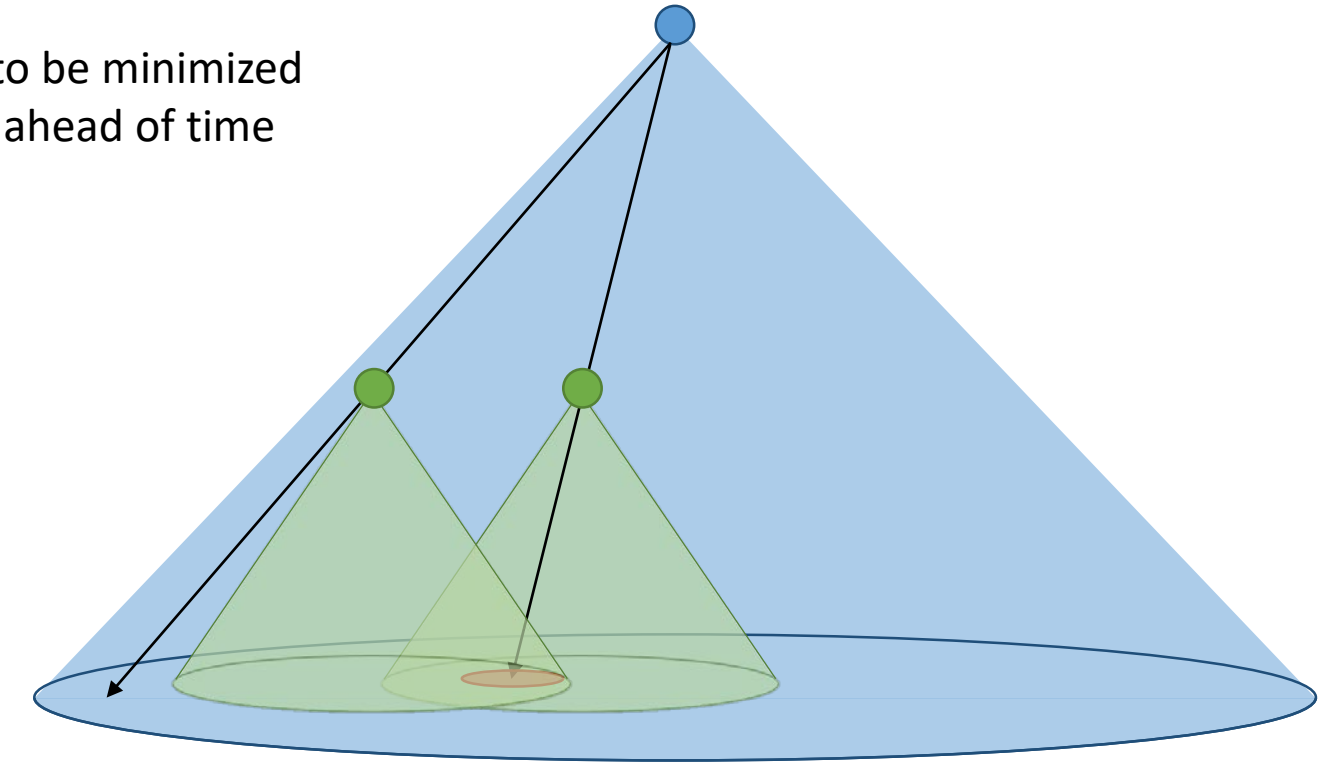

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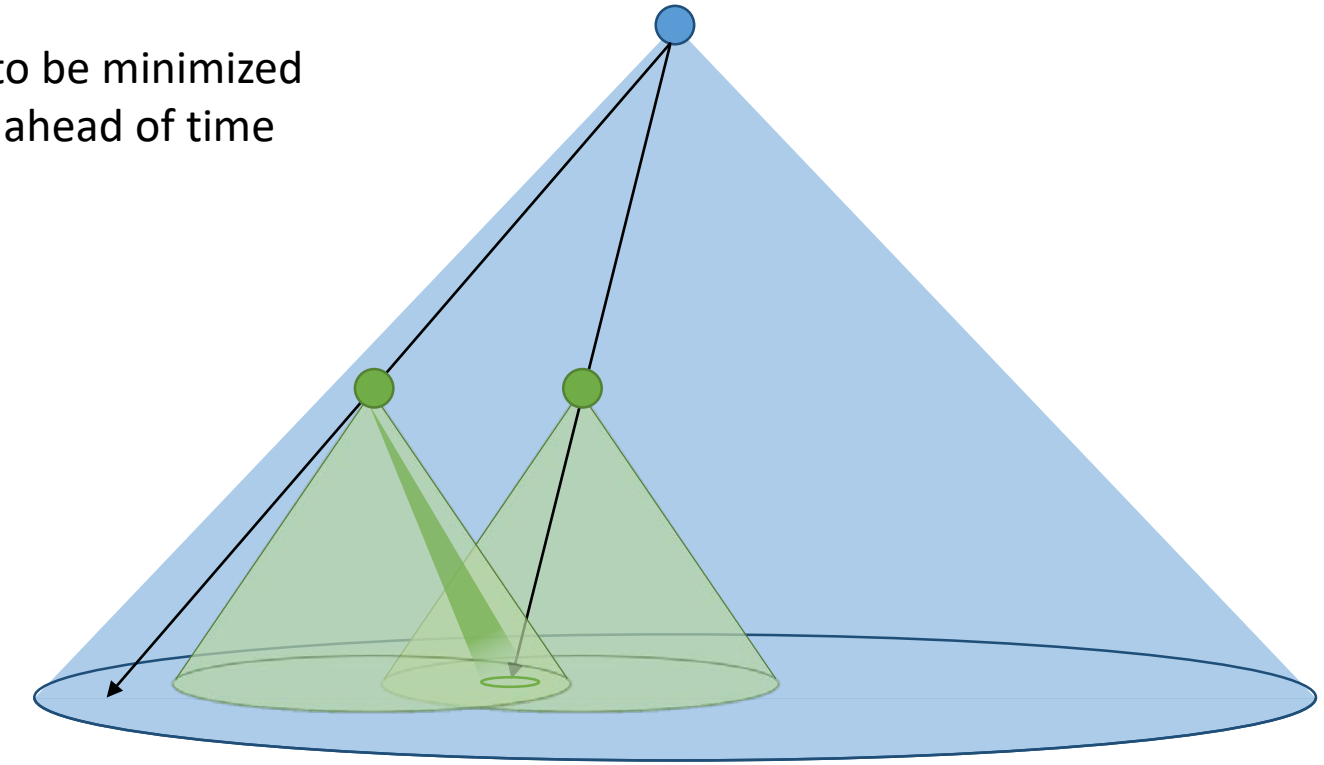
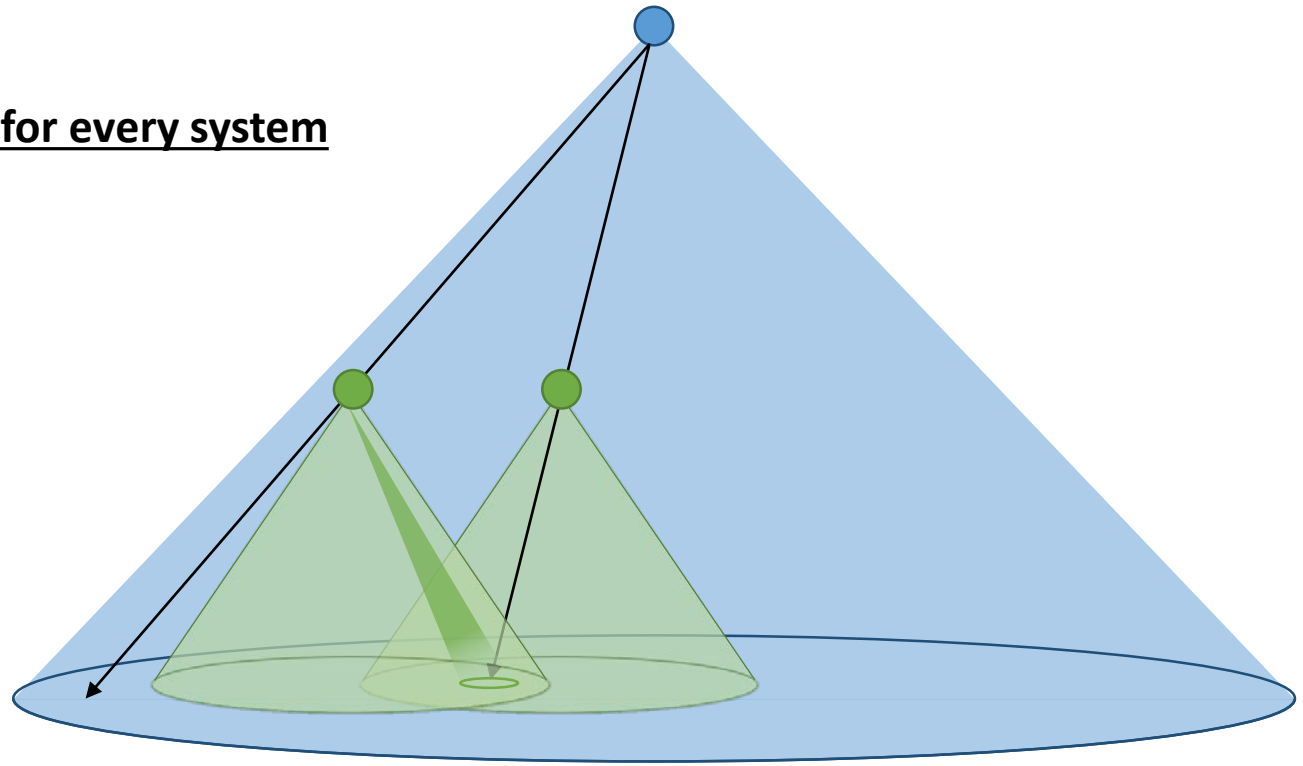


Advantage of ITU Priority Framework

An ITU priority framework, together with a 6% ΔT/T coordination trigger, enables and rewards later-in-time operators to design systems that minimize the potential for interference

<u>Spectrum certainty across entire band can be achieved for every system</u> in this framework regardless of position in priority list



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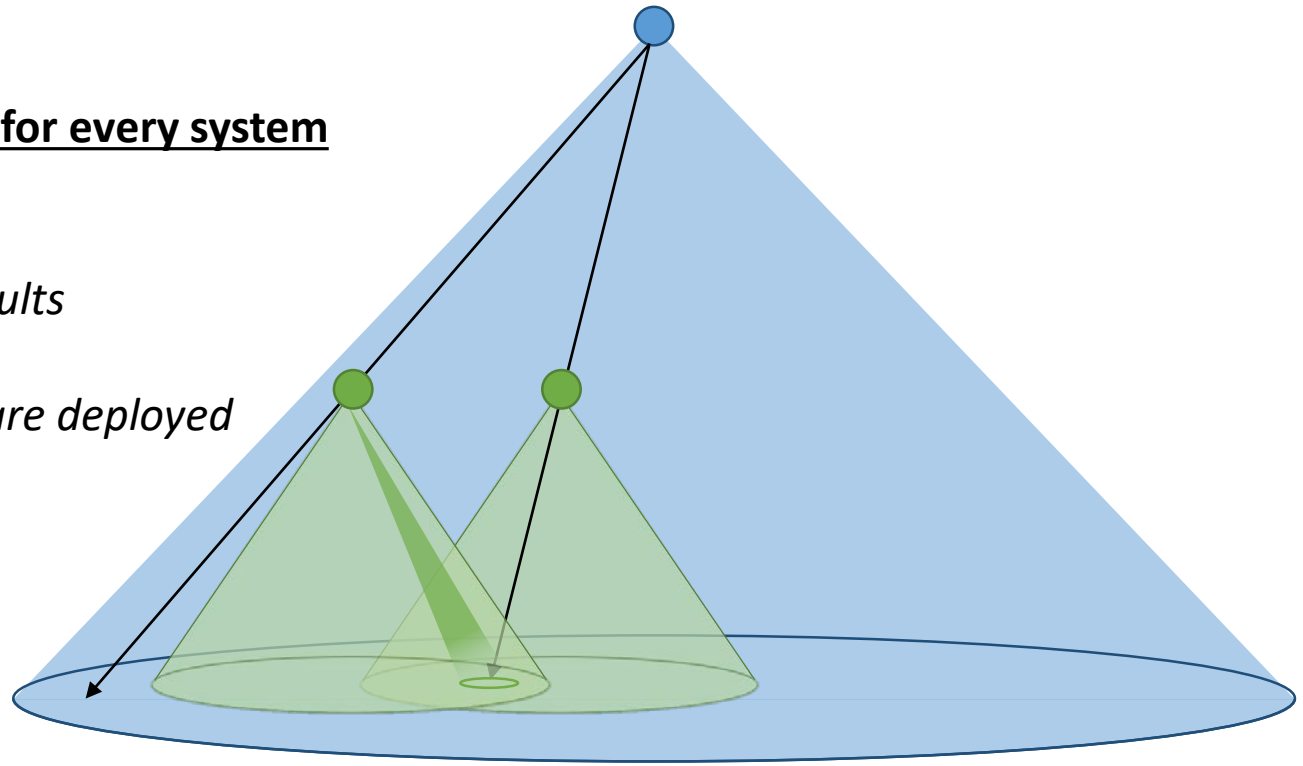
<u>Spectrum certainty across entire band can be achieved for every system</u> in this framework regardless of position in priority list

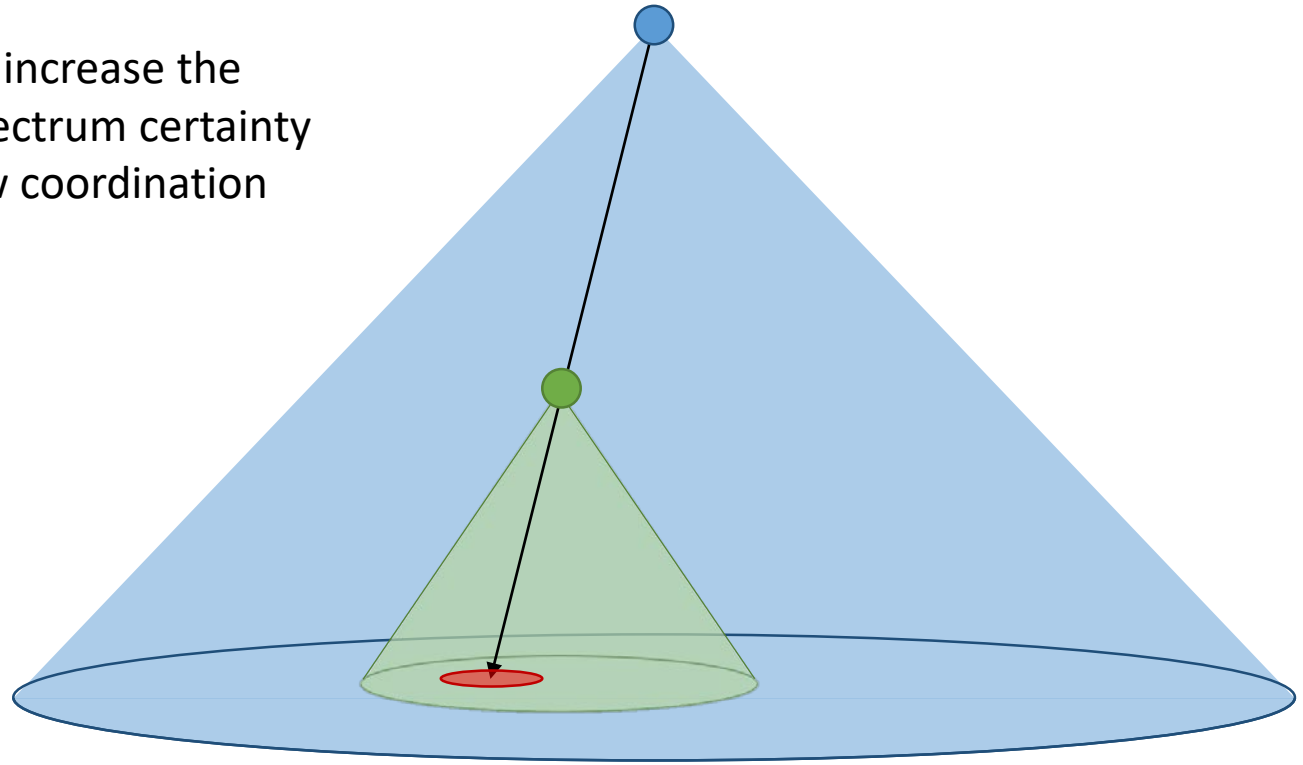
- *Certainty doesn't depend on specific coordination results*
- *Conscious design facilitates streamlined coordination*
- *Certainty remains even if new, later-in-time systems are deployed*



Weakness of Band-Splitting Framework

In a regulatory framework based on band-splitting, the existence of red areas means that spectrum is uncertain in all systems, past and future

In fact, later-in-time systems are actually incentivized to increase the *apparent* number and size of the red areas: reducing spectrum certainty for earlier-in-time systems and creating leverage to skew coordination



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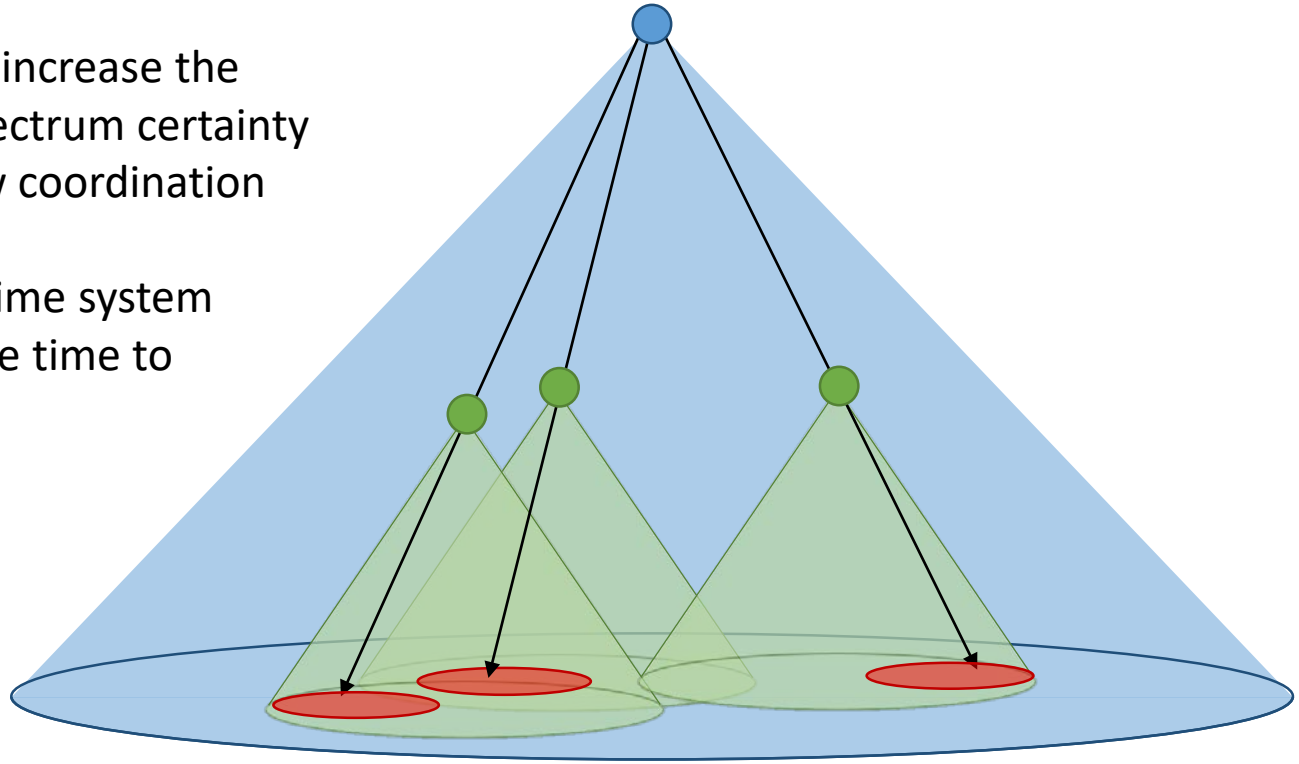
This is further made possible by the fact that earlier-in-time system designs are known, and later-in-time systems have ample time to exploit these details, in some cases many years after the earlier-in-time system has been designed or deployed

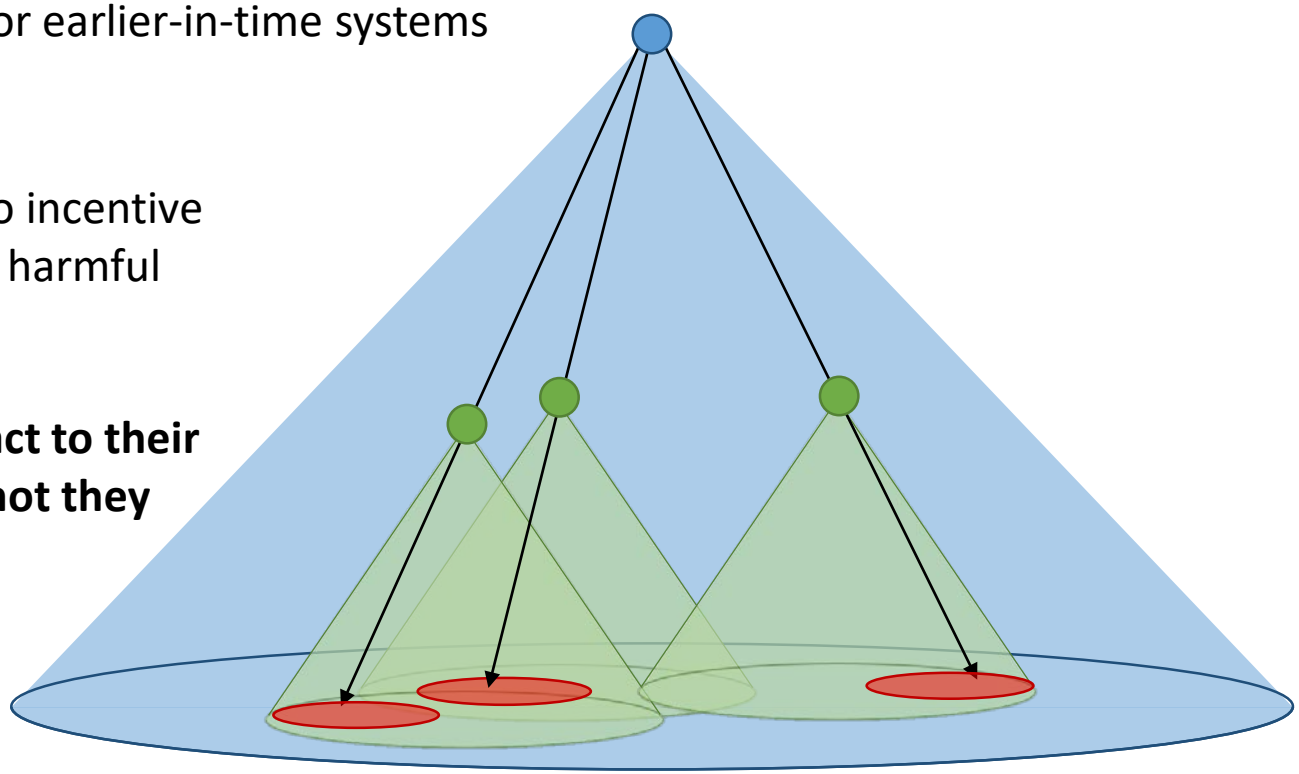


Weakness of Band-Splitting Framework

The red areas can be created and manipulated by later-in-time systems so as to be plentiful and large on paper, whether the systems are built or not. With this power, the paper systems can maximize spectrum uncertainty for earlier-in-time systems and could chill investments in those systems

Even if the later-in-time system becomes real, there is no incentive for it to coordinate. Red areas can remain indefinitely as harmful potential band-splitting regions

Later-in-time systems can do this for free, with no impact to their own spectrum certainty, and regardless of whether or not they actually deploy



Conclusions

- A regulatory framework based on ITU Priority and a 6% ΔT/T coordination trigger is the only framework that makes spectrum certainty across the entire band equally possible for any system, regardless of time-of-filing
  - **This promotes financial investment, allows design requirements to be finalized, and ultimately enables multiple systems to be deployed on equal footing**

- A regulatory framework based on band splitting rewards anti-competitive behavior by enabling later-in-time systems to exploit other systems' design details to create spectrum uncertainty and chill investment